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# Educational Efficiency for the Ninety and Nine

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A Plea  
for the Children of the Elementary  
and Grade Schools

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### OPPORTUNITY

*Master of human destinies am I.  
Fame, love, and fortune on my footsteps wait.  
Cities and fields I walk; I penetrate  
Deserts and seas remote, and, passing by  
Hovel, and mart, and palace, soon or late  
I knock unbidden once at every gate!  
If sleeping, wake—if feasting, rise before  
I turn away. It is the hour of fate,  
And they who follow me reach every state  
Mortals desire, and conquer every foe  
Save death; but those who doubt or hesitate,  
Condemned to failure, penury and woe,  
Seek me in vain and uselessly implore—  
I answer not, and I return no more.*

—John J. Ingalls

# Educational Efficiency for the Ninety and Nine

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## A Plea for the Children of the Elementary and Grade Schools

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Untold volumes have been written on the subject of Manual Training, Vocational Training, Industrial Education, Digital Practice, Motor Activity and every possible division of that great movement which concerns itself with the training of the pupil with reference to his ability *to do things*—and to do them well.

It is not the purpose of this paper to set forth any new theories or to pass final judgment upon the solution of this weighty problem, but rather to add its meager force to the mighty trend which is sweeping over our schools and awakening them more and more to a realization of their obligation to their supporters.

As long as 95 per cent of our children quit school before completing the High School, and 85 per cent before completing the grade work, there is room for serious concern; as long as the common schools, the hope of our country, are turning out such a limited number of finished products from the immense amount of raw material available, no effort in the interest of more attractive, more practical, more educational things in our schools needs to apologize for its existence. If any apology is due to the educational thought of our land today, it is rather from the school men who may be remaining inactive, satisfied in the Mediaeval rut, while all around them the Ninety and Nine are crying for bread and receiving a stone.

Ninety-five per  
cent of Unfin-  
ished Product.

### THE SCHOOLS AND SOCIAL CONDITIONS.

The real value of a marketable product is determined by its fitness to meet the demands made upon it. Regardless of the price, a razor is valuable only in so far as it will shave—nothwithstanding the story of those which were made not to *shave* but to *sell*.

A suit of clothing, be it ever so cheap, is valuable to a man in proportion to the measure of comfort and happiness it affords him, and when, by reason of his physical, aesthetic or fastidious development, or by reason of its own wear and tear, it fails to serve him satisfactorily, he has no compunction in laying it aside for another which better meets his immediate need.

The mere hut, which was once sufficient shelter against material enemies, is no longer a home for civilized man, his advancement along innumerable practical and artistic lines requires furnishings and trappings which his earlier condition never dreamed of. Many of the old ideas which man once held sacred, as a part of his religion, are now listed in the category of superstition. With the chains of darkness and ignorance broken, he is left free to exercise both mind and hand in studying and applying the laws of his Creator for perpetuating his own existence.

In Mediaeval times the church undertook to establish a system of mental training which would prepare the clergy for their particular line of work. It was an attempt to develop knowledge from consciousness, by a course of gymnastics in formal reasoning, and any sort of observation, experiment or investigation was tabooed. A course was designed for the education of church officials, who constituted a leisure class and who, to show that they were separated from the laboring classes, instituted the custom of wearing extra long sleeves with white cuffs.

At that time universal education was not even thought of, in fact such a venture could not have been voiced with any guarantee of safety to those advocating it.

Education was kept under the control of the ruling classes, it was a monopoly of the aristocracy, for they realized that a thinking people do not serve well under tyranny. "Know the truth and it shall make you free" has many literal as well as figurative applications.

Without entering into a discussion of the historic development of our school system as it stands today, suffice it to say, that we have attempted the great problem of educating all the people. And most of our states have gone so far as to pass laws compelling all children under a specified age, usually fourteen or sixteen years, to attend some school.

This is a tremendous task, for at least two very evident reasons. *First*, it brings to our schools a class of children who, being there

under compulsion, have no real or spontaneous interest in the work. For such it is almost literally a case of holding the child's nose while we pour down the prescribed dose.

*Second*, there is a great responsibility incumbent upon those who are to manage these public schools and to formulate and enforce observance of curricula. It is no great matter to spread a feast where the visitors may eat or decline as their appetites require; but the preparation of the feast should lie heavily upon one's conscience when he is forcing his visitors to eat, and to eat abundantly regardless of appetite or the promptings of nature.

The corner stone upon which the American government is founded is the equality of men, and if this system of universal education is to serve its highest function it must be compatible with that principle. Not that sort of equality which gives to all men an equal amount of Latin, Science and Mathematics, but that adjustment of powers which causes every man to fit harmoniously into his particular place in the great mass of self-governing, self-supporting citizens. But the colossal joke—and quite a serious one it is too—upon our present system is, that it has its very foundation upon the same principles and curricula which were previously employed when the function was exactly the opposite—to establish castes.

To be sure the schools have made progress; there is nothing in the whim of those who insist upon lauding the "good old days gone by," but society has likewise made phenomenal strides and the question is, "Have the schools kept apace?"

Many feel that it is well nigh sacrilegious to question the educational value of anything belonging to the school system. But this is an age for business, talents are seeking investment where the dividends are surest and highest. Unprofitable business must be reorganized or abandoned.

Though the artistic, the aesthetic—the true elements of character cannot and must not be commercialized, yet they can not escape the universal law which says that value is dependent upon efficiency to meet human need.

Fifty years ago school men felt that their work dealt with the intellectual alone, and for their day they were largely correct. The function of the school has always been to furnish that training not afforded by the home, and in those days the home offered much indeed and thus relieved the responsibility of the school. Then

Educational  
Equality.

Change  
of Home  
Conditions

every home was a workshop; every boy was an apprentice to his father and every girl to her mother. Children learned to take part in the production of home necessities. The boy spent many hours during the day with his father assisting in his duties and acquiring habits of honest industry. The breadth of his experience extended over many processes in mechanics, from raising the flax to the completion of the garment; from the clipping of the wool, to its preparation for home use; from the moulding of the bullets to the dressing of the victim of the chase. The family cooperated in producing practically everything which supplied the table. The farmer was his own blacksmith, shoemaker, and even physician, if indeed one was ever required.

Then boys did not need Manual Training in school as much as they needed the things which their home experience lacked. Terms were very short, and courses could not be broad and comprehensive, so they offered only intellectual training and depended upon the home to meet the moral and physical requirements.

But the present day home is far from being a workshop, now everything is brought in ready made. The hurry of industry and hum of toil are no longer heard. Home is now a synonym for relaxation, rest, retirement and often even luxury. Children scarcely see the home commodities produced, much less do they assist in their making.

Parents are continually hurrying about their duties and have almost no time left to spend in the presence of their children; it is a lucky boy who may occasionally follow his father to the shop or factory, to the office or store, to the forest or field, and there get a glimpse at some real industry.

No one would deny that home conditions now are immeasurably better than they were fifty years ago; but the point is, what are we doing in order still to give to the children the things which the home no longer gives? The length of school terms has been increased to nine or ten months, more teachers have been employed and at higher salaries, finer equipment in every way has been furnished—then surely the responsibility for the entire, rounded and symmetrical education of our youth lies upon the public schools.

Boards of Health and various authorities have made gratifying progress in providing conditions conducive to health. It would be criminal to conduct a school and disregard or neglect the laws of

Commercial  
Age Makes  
Home Training  
Inadequate

hygiene; no one disputes that every effort must be made to develop strong healthy bodies. But what is the purpose of these strong and powerful physical beings?

A rhinoceros has those qualities. Is the physical an end or a means? To be sure a healthy body is essential to the highest degree of happiness, but the only consideration of the physical at all worth while, demands that all these latent possibilities shall be trained to their greatest efficiency in action. Strong muscles are manly and valuable, but they reach their maximum worth, only when combined with skillful intelligent control.

If our existence were wholly an intellectual one, a course of study catering only to intellectual needs would be entirely satisfactory, but since we are endowed with bodies purely physical, which must be fed, clothed and supported by physical means, surely material needs can not be entirely disregarded.

It is impossible to separate one from the wants which necessitate skill and practice of muscular control. The very act of feeding one's self requires skillful and graceful use of tools.

The acts of dressing, putting on the hat or gloves, opening a door, walking down the street, raising an umbrella, sharpening a pencil, or hundreds upon hundreds of other actions, which go to make up a single day of one's life, are all making requirements upon the muscular possibilities, demanding, as it were, that every single muscle, nerve and fiber, be brought to the point of highest efficiency in human service.

Education must face these problems. The school is appealed to; along with its Languages and Mathematics, its Arts and Sciences, it is called upon to furnish that which makes not only for the *knowing* but also the *doing* of things. There is a solution.

Careful investigation and experience have led our foremost educators to believe that it is in Manual Training, and the voice of economy speaks up and pleads that it be that sort of Manual Training which lays the foundation for the vocational.

A system which has for its primary function the immediate development of the pupil, and for a function scarcely secondary, fitting him to go out into the world and enter upon some of its great projects and make good among men who *do things*.

### THE LARGE HIGH SCHOOLS AND SPECIAL MANUAL TRAINING SCHOOLS.

For many years polytechnic schools have existed and universities have offered special courses bordering upon the vocational. The doctors, the dentists, the lawyers and the preachers have had their respective preparatory schools, but they have always been upon the mountain top, while the great sea of humanity never rises to the level of its base.

#### **Elementary Manual Training.**

The last decade has seen a step toward the masses and the great manual training effort of the day is now centered upon the secondary schools. But it is gratifying indeed, to those who are thinking along this line, to know that it is thoroughly proving its worth; that it is opening the eyes of those who have long been blind, and is actually coming into successful operation in the elementary schools.

In a very short time hand work is to find its place in every grade down to the first primary, and it is destined to take lodgement where it should have had it origin.

Practically all the large high schools of today are well equipped with Manual Training departments, where able instruction is being offered in various lines of work. In many of our cities Special Manual Training schools have been established at enormous expense and all this effort most assuredly deserves our hearty appreciation and support. No progressive educator, or even layman, would ever begrudge a single dollar that such an institution cost, but it surely calls attention to a lamentable condition; the fact that such a very, very few students are eligible. It would look too bad to see a beautifully equipped Pullman car go whirling by with only one or two passengers, while the weary and foot-sore Ninety and Nine trudged along trying to make the selfsame journey.

#### **Manual Train- ing for All.**

If every boy, throughout the United States, who enters High School should have an opportunity to take some kind of Manual Training work—and this is far from the case at present—even then it would be a small percent of the great mass of American school children. And again, who are they that can remain in school long enough to reach this High School course? They are the sons and daughters of well to do men, who can support their families without their assistance. These children quite likely will

not be required to quit school and go to work. They, if anybody, could get along fairly well without Manual Training.

But their less fortunate classmates, the great majority, the Ninety and Nine, who under the lash of poverty were driven from this excellent opportunity of being fitted for their life work, went out into the world and sought that kind of labor which totally unpracticed hands could do.

Those who do reach this course come to this beautiful elaborate equipment wholly unprepared to make the most of it; entirely without preliminary hand training, which, if it had been given them during their earlier years, would have served a valuable educational function, besides preparing them for this advanced work which should in a large measure, bear upon the vocational. Pupils come to these schools without knowing so much as the names and functions of the tools, much less do they have any idea how they should be handled. By watching a beginning High School class of boys, taking their first lesson in bench work, one is easily convinced that they are rather late in taking up the work.

**Grade Pupils  
Not Prepared  
for High School  
Manual Train-  
ing.**

Musicians have long recognized the value of having children start very early in instrumental work. It is very common to see small children play well on the piano, their nimble fingers easily acquire skill which the adult develops with difficulty. Who would advocate waiting until a child is seventeen or eighteen years of age before starting him in instrumental music? And yet it is scarcely less an accomplishment to handle a saw or a chisel than a violin bow.

Our fine mechanics, who handle tools with ease and grace—our real artists are, as a rule, to use the old phrase, born with tools in their hands. The use of tools can not be learned in a day, it requires years of careful constant practice to become proficient in handling even a hammer, saw or plane. He who takes up the study and use of tools after reaching the age of manhood has the odds very much against his ever becoming a model of skill. Lucky is the lad whose first toys are real tools.

So these elegant schools with their thousands of dollars worth of equipment and their proficient teacher, who is capable of developing masters of mechanics, must handle raw material, and decidedly raw some of it is. These pupils have no conception of material expression; they may be able to recite all the definitions in the Geometry, but can not see that the *right angles* which they have

**Material  
Expression.**

constructed in a picture frame deny the definition by at least ten degrees. They have no notions as to the origin, preparation or application of materials. They do not remember that their text in Botany mentioned the quartered oak as one of the deciduous trees, hence they can not understand why any such lumber is in the shop. Nor do they recall that the Geography gave them the location of brass mines; they do not know whether glue is the sap from some sort of sticky plant, or is the essence of attraction extracted from a horseshoe magnet. We find them equally without information on hundreds of other points of interest. To be sure they know the subjunction forms of all Latin verbs; the full results of the Crusades, and the laws of falling bodies, but this shop work has a different means of interpreting things, it is a radical change from the old routine of abstract class work; they fail to see the correlation, and why shouldn't they?—There isn't any.

They have been reading in books, matching the signs of ideas, now they are called upon to match real materials. They have been talking about what others have done, perhaps two thousand years ago, now they are doing things themselves.

So they must be met on their own level, you can not commence at the top to teach boys Manual Training any more than you can to build a brick chimney. They must learn to square up stock, to lay out and execute the most simple operations—to do the kindergarten processes of hand work, if you please,—and that in a Special Manual Training school for men, when all these elementary things could just as well, and with far better economy, have been taught in the proverbial little red school house on the hill.

#### THE TRADE SCHOOL.

**Trade Schools  
Miss the Mark.**

The trade school separate and apart from the regular public school, always will be a proposition detrimental to the underlying principles of our free government. While it may serve the immediate need of furnishing more skillful artisans, it will produce them at an expense ultimately unjustifiable. We are not so much in need of better mechanics as we are of better men who are mechanics. Of course this is an age of specialists, and the coming ages will be more so—and well they should, but it is also true that the specialist will constantly require broader and more comprehensive development.

It requires a wide and solid base to support a lofty pinnacle with any degree of firmness.

The effort at universal education is not to make every man a "Jack-of-all-Trades," but to give him a comprehension and appreciation of as many things as possible, along with a mastery of something. The man who does common things uncommonly well will always have a job and will receive a goodly share of happiness along with his wages.

Trade and Agricultural schools, catering only to the vocational needs of those who are to do that kind of work, will tend to establish castes, to peasantize the farmer, to reduce the laborer to serfdom and to leave the management of social and governmental affairs to those trained for that particular line. This will mean the centralization of power in the hands of the aristocracy, and will eventually compel us to reiterate the experience of the Romans. It means *thought* versus *labor*, the thinking man lording it over the laboring man, rather than the laboring man doing his own thinking and thereby becoming master of his own capabilities.

**Special Schools  
Detimental  
to Social  
Conditions.**

#### HOURS IN A FACTORY.

Some have advocated the idea of having students spend part of their time in school and the remainder in actual work in some nearby factory. This very act of giving up the pupils for half, or any fraction of the time, and sending them away for training, is an open confession that something about the school is wrong. Our course is omitting something valuable, our methods of presentation are not effective, the required equipment is not furnished or something, somehow, somewhere is at fault.

Those who favor this plan believe that it gives the pupils training in realities; that they here meet the real problems of industry and learn to solve them as they are being solved by men of affairs in the commercial world; that pupils acquire habits of promptness and application under factory supervision. Concede that this is true, it is only a reflection upon the status of our public schools. If our present system lacks these realities, if it fails to inspire pupils with a desire to apply themselves, then certainly we should revise the system. Let us install the practical things rather than send the pupils elsewhere to seek them. Commercial enterprises are not established with the design of becoming educational institutions.

**A Weakness  
Confessed.**

Are factory superintendents and foremen, as a rule, the proper type of men to supervise the development of our youth? Do they understand how to appeal to boys, to awaken their enthusiasm and

to inspire them to educational attainment? If the answer is affirmative, where did they acquire this proficiency?

Let us cast our psychology and pedagogy to the four winds and cease studying child development and get busy upon factory methods, if we are going to concede that our boys must be sent there to get the realities of life.

But it does not require any deep consideration to see that factory influences upon young minds are degrading, not only intellectually but morally. Here boys are brought into immediate contact with men lacking in ambition, void of the aesthetic element and usually, in many ways, far below the average of American citizenship. They become mere machines, so mechanical in the routine of their motions that there is no more thought on their part than on the part of the machine itself—working to make a *living*, not to make a *life*. Suppose our boys rise above the level of the laborer; even if they go a step higher than those who merely punch so many holes in a piece of iron without any idea of its function; even if they could enter into the management of a great plant—and this is far from probable—the notions acquired would be risky indeed when grafted upon immature minds.

The conflict for financial aggrandizement needs no encouragement in the American youth. They will be overselfish despite all endeavors to the contrary.

Taking hours out of the present school day and spending them at employment in the factory can never be the solution; it is only a makeshift prompted by an effort at economy. Its unsatisfactory results soon will be added to increase the number of arguments which are demanding that the schools shoulder their entire responsibility and fulfill their function.

#### THE COMMON SCHOOL CHILDREN.—THE NINETY AND NINE.

Throughout this discussion thus far we have left the Ninety and Nine in the wilderness and gone in search of the One; when, lo! it is not the One which has gone astray but the Ninety and Nine.

**The Few versus the Many.** The universities, colleges and special schools are caring for the favored few; but what is being done for the vast army of grade children, twenty million strong, which today are under the training of our public schools, but tomorrow will be turned over to the state as its citizenship?

Existing social conditions demand that at least 90 per cent of them shall go to fill the ranks of those who are destined to be hewers of wood and drawers of water. As they go forth to enter life's duties they will each one be confronted by the world's great challenge, "Young man, what hast thou in thy hand?"

David of old went forth with his sling and pebbles-tools which his boyhood days had mastered—and right well did they serve him in time of imminent peril. The Goliath of necessity, of want and grim penury still walks up and down the land challenging to mortal combat every young man, too many of whom must go forth to meet him all unarmed and empty handed.

If the school is to remedy this plight, it must reach the child when he is under its influences, and that is early in the grades.

Those who do not see the value of Manual Training in the grades are often under the impression that it is intended to be vocational, but the distinction is clearly marked. Industrial training places the emphasis upon the shop product, with the intention of working out the most skillful and economic way of producing marketable goods. But in the pedagogy of Manual Training the student is the product of paramount consideration. The lesson has value only in proportion to its influence upon the boy; every real Manual Training lesson should be planned with the needs of the boy, not of commerce, in mind. If it does not promote him intellectually and morally as well as physically, it is a failure, though the product may be the acme of mechanical perfection.

There is sure to be great risk in taking up industrial or vocational work with young children. While their life habits and characters are in the most plastic stage of formation, it is certainly unfair to have them employed at a task the development of which is rated above their own development.

But no child is too young to begin Manual Training in the broad sense of the term, nor is there any period in his progress when it should be neglected. When a pretty object is held before the infant he will reach for it; this is one of the first Manual Training lessons. Mother Nature, his earliest and best teacher, intends to give his hands a chance to confirm, in a concrete way, his abstract impression of that object. In all his first lessons his hands, his feet, the back of his head—his entire physical being gives him his most vivid impressions. The child who has received physical

**Manual Training  
Differs from  
Industrial  
Training.**

**The Plastic Age  
of the Child.**

evidence that fire will burn him has a sufficiently clear conception of the fact, although he cannot explain molecular vibration.

When he starts to school shall we reverse the process and require him to remain quiet for long periods at a time? Shall we tell him to sit still at his desk and study, that this is brain work now—a process of *instruction*? Of course, the activity, the play, the exercise will come in due time and in sufficient quantity, but that is a separate consideration, a function apart from acquiring *knowledge*. It does not require a psychologist to see the absurdity of such reasoning, yet are you sure that such a criticism would not find us in a large measure guilty?

**Manual Training Vitalizes the Course.**

Too many think that Manual Training is a new subject seeking admission in an already overcrowded curriculum. But such is not the case. It is not seeking admission. Its vital points are there, only demanding recognition and development. The function of Manual Training is not so much to make the course extensive as to render much of the present work more intensive.

Material expression should be so closely and vitally correlated with every subject of school work that it would be a part of it as specifically and inseparably as oxygen is a part of the air.

This broad use of the term does not mean merely hand training but applies to the control of the entire body as the natural and legitimate means of expression; it proposes to give some visible and tangible expression to ideas and ideals. Any impression is deepened when portrayed and accompanied by physical expression. If a man when slightly angry will clinch his fists, grit his teeth and stamp about, he will find himself growing all the more angry by the very reaction of his own muscular exertion. On the contrary, many men do much toward keeping themselves in a happy state of mind by continually exercising the muscles which make smiles.

Every member of the body should be made to co-operate perfectly in portraying intellectual ideas.

Language is merely a mechanical and physical means of bridging over between two minds which wish to communicate. A gesture, a nod of the head, a wink of the eye or any change of facial expression may add immeasurably to one's language.

All these are only natural material expressions, but only recently has the world recognized their connection with the subject of Manual Training.

Penmanship was one of the very earliest forms of Manual Training to be adopted by the schools, and its value as a means of expression has never been disputed. But for a long time written expression was limited to conventional characters called letters, and no form of drawing was tolerated even among the foremost educators.

Any student, fortunately endowed with unusual initiative, who dared vent an idea by embodying it in a drawing, was considered a culprit, and was required to make restitution. Penmanship was digital training, but limited almost entirely to the fingers, although the forearm was slightly called into action.

Many an old-time writing teacher would spend hours to get a boy to write the word *ball*, with all the letters just the right size, form and degree of slant, but would be shocked almost to anger to find that the boy had drawn a single picture of a ball upon the margin of his paper. We can only guess what would have been the fate of a lad who should have been caught making a real ball in time of school.

By dint of hard knocks, Drawing has finally forced its way to recognition, to such an extent that no program is considered complete today, unless it provides for ample instruction and practice in both mechanical and freehand work.

Penmanship  
and Drawing  
are Manual  
Training.

All are agreed that the pupil's conception of the physical features of a country is very much clarified and impressed by drawing a map showing the details. If he goes a step further and models a map in relief, using paper pulp, dough, or some kind of plastic clay, he has practically removed all possibilities of a misconception. The drawing has only one plain upon which he is restricted to two dimensions, while his relief model can be made true to reality in every respect, and is therefore more valuable in educational efficiency.

A child may understand that our western highlands are more elevated than the eastern highlands, but this does not assure that he will long remember it. If he gives a verbal explanation of his understanding, it will help him very much to retain it; if he employs more muscles and writes it out, better still; yet a drawing, which, by shading or arrangement of colors, works out the idea, makes a stronger demand upon means of expression and thereby deepens the impression. But the modeling necessitates

more activity, calls more motor powers into co-operation, and thus almost guarantees that the impression will be lasting.

One may impart his idea of a six equal sided figure by the word *cube*; he may render this more intelligible by drawing a perspective or isometric view; but if he really constructs this figure of wood or some other material, his conception and interpretation are perfect.

**Instruction and Construction.** Such illustrations might be cited by scores and scores to show that the process of teaching should be not only *instruction*, but also *construction*. Of course, there are many things in school work necessarily abstract, and it would be practically impossible to give them concrete existence. Yet this does not argue that we are therefore licensed to omit the construction altogether; rather, every point of imparted instruction should, if possible, be followed by its related construction.

**Book Teaching versus Subject Teaching.** This would require considerable time as a first investment, but it would certainly pay large dividends in results achieved. One of the greatest criticisms that could be passed upon the American school system today is that we are going too fast; we are too anxious to cover a large number of pages; consequently, we are often teaching the book instead of the subject. The old saying of passing "in at one ear and out at the other" applies to much of our classroom work. Lessons are conned by rote. In graphophone style, students often grind out so many words which they have previously ground in, and after the recitation is over they not only lay it aside, but usually destroy the record.

We teach too many definitions and too few meanings. To instruct a child in regard to a square, a circle, or a rhomboid, one should have him observe its characteristic features; then, from his understanding, draw it or cut it out of paper; then finally construct it of some sort of more substantial material.

The more work a pupil is required to do to bring out perfectly the distinguishing features of his project, the more sure they are to stick in his memory. The boy who has labored for hours to make a square picture frame has an appreciation of a right angle which he could not have gained from the dictionary. In order that these exercises in construction may have vital interest for the students, they must be employed in making something real.

The construction of a dihedral angle for its own sake would not be very inspiring to a lad, but the dihedral angle as an incident in

putting together his dove cote or tool chest would appeal to his appreciation. We should never lose sight of the fact that it is hard to teach a live boy with a dead lesson. Since a child cannot make everything which he is studying about, he should make those things which, while valuable in themselves, are typical and representative of many of the great principles of his material environment.

A top whittled from a spool may illustrate much of the principle of a monorail car; a box kite may help solve the mysteries of the biplane, and a rude wheel, on a toy wagon, is typical of that principle of revolution upon which the industries of the world depend.

He should be allowed to make things which appeal to him, but he should be so directed that he will make them well. It is legitimate for a boy to make a toy gun or a kite, and there is much education in either problem, provided it demands and receives his best effort.

But it requires a *teacher* to bring out and duly emphasize this correlation—a teacher who understands the pupil and knows how to appreciate his view-point. There must be selected for him a carefully graded course, which will serve not only for training his muscles—a course in gymnastics would do that admirably—but a course which will develop him aesthetically, ethically and intellectually, as well as practically. This course while it is designed for its real educational functions should keep in mind the life needs of the students, in the various activities which they may be called upon to perform. A boy might be taught to control the muscles which move his ears, and that would be motor control, a form of manual training, and it might have some value in an impression upon his intellect, but certainly such muscular control would not have much connection with anything which pertains to the vocations of life.

From this point of view certain forms of digital training have been discarded and certain others have been installed. It is not satisfactory merely to know that a child is busy—he must be working with an effort toward a design. The teacher should motivate his industry.

Considering the  
Interest of the  
Boy.

The Instructor  
Should be a  
TEACHER.

### BUSY WORK.

**"Busy Work"**  
**Lacks Motive.** The so-called "busy-work" craze swept over our schools a few years ago, and the very sound of the term caused it to meet the approval of many of our educators. Every beginning teacher was zealous to secure abundant materials for busy work to employ the hands of pupils who might otherwise annoy her. Much of this work was entirely without purpose or application. For hours children have played with colored pegs or beads or what not, without the least ideal or design in mind. Surely, the educational value of such employment, without plan or correlation, is very limited. A child might gain much good from stringing a few plain white beads, but to continue stringing white beads, without any variation of color, or of position or design, soon loses all thought requirement and becomes a waste of time. But if to the finger practice of stringing of the beads there is added careful concentration of mental force in order to get the required results, then the work becomes real Manual Training,—a co-operation of *mind* and *hand*.

Writing, drawing, paper construction, clay modeling, cooking, sewing, bench work in wood and metal, and thousands of other processes, have the elements which make Manual Training work valuable. That is, while they are awakening interest and imparting enthusiasm, they are developing the various members of the body to serve human needs more efficiently and more pleasantly.

### ÆSTHETIC AND ETHICAL VALUE.

The appreciation of the æsthetic and the sense of the ethical are among the distinguishing characteristics which mark off man from the animal kingdom, and the broader the development of these possibilities, the wider the range between the human and the brute. Surely the school cannot shirk its duty of fostering every influence which may aid in this great soul development.

**Inspiration of  
Value to  
Children.** Anything which has objective beauty, symmetry and grace is an inspiration to children. A teacher who is neat, clean and tidy, and adds to this a pleasant face, with one of those contagious smiles of real sympathy, is a blessing to any school room.

The beauty of a red sled has brought joy to many a youngster who was not particularly enthusiastic over the Parthenon or the Coliseum. And if this sled represents his own handiwork, its beauty and value to him are enhanced beyond measure.

A nice, clean piece of material is an inspiration to a boy. Its clean, smooth surface gains his respect, and to mar or deface its beauty with a poor effort, he feels would be almost cruel. This is a strong reason why beginning pupils in hand work should be furnished the very best of material; older or more mature students may be able to see the elegance of the finished product even while the material is yet in the rough, but this is too remote and abstract for the beginner.

It has been almost surprising to notice that many students, who were careless with their books and even untidy in person, have shown so much intuitive respect for their handiwork that the reaction improved all their habits. It is psychologically true that the best way to inculcate wholesome self-respect upon a boy is to engender within him the proper respect for his environment.

Psychologists have explained, and we have all observed, the change of attitude which a child has for an object as soon as its ownership is transferred to him. A toy may be given to a child with the understanding that he may do with it entirely as he desires, but that the toy is to remain the property of his father. However proud the boy may be to receive this gift under these conditions, his exultation will have a new unexplainable spontaneity if the father afterwards tells him that he may have this toy all for his own.

While satisfaction of undisputed ownership of things is the consideration for which most human efforts are expended, yet this gratification is immeasurably augmented if to ownership of things it may add creatorship of them. Only those who have experienced the thrill of satisfaction which comes to one who is looking upon the product of his own handiwork, can know and appreciate the æsthetic value which a finished piece of work has upon the child who did it.

The grammar or history lesson would have the same value if the results of a completed lesson were as evident to the child, but they are not; neither can they be made so, however explicit their presentation.

If Manual Training results were entirely devoid of the practical and of the æsthetic, its ethical influence alone would still justify its installation.

**The Pride of  
Ownership and  
the Joy of  
Creatorship.**

The very nature of classroom instruction and its required research work tend towards selfishness. It is too much a storing up

within one's self for one's self. Students often feel that they are to gather facts and information to be retained and laid away as the miser does his gold. The finished lesson too seldom shows the pupil that it has given him anything which he may share with others.

**Altruistic Tendencies Fostered.** When a child has completed his shop problem, his efforts have left material and substantial evidence of his integrity. His sense of honesty to himself and to those about him is quickened by the undeniable imperfections in his work. His associates may see and enjoy what he has accomplished; he has something which he may carry home to arouse the admiration of his parents. And it often happens that some of those very fathers who do not have sufficient interest in a son's school work to sign his monthly grade card will become enthusiastic over something he has made. When a boy's picture frame or paper rack is given a place among the home decorations, or when some friend has taken a bit of his work as a remembrance, he realizes that school is enabling him to exercise that most laudable of all human functions—*to do something for somebody.*

The hidden and abstract egoistic possibilities have been transformed into open and concrete expression for altruistic service.

#### SOME SUGGESTIONS IN REGARD TO THE SOLUTION.

But word pictures of what would be good to do, and theory of what ought to be done, do not always aid greatly in obtaining the things which they advocate.

A man who is drowning is not particularly concerned in the theories of buoyancy, but any real floating substance would be met with some appreciation. So those who are instructing their pupils without any form of Hand Training, should give heed to every straw of suggestion which might come their way. If its installation was thus earnestly and unanimously pursued, a very short time would find some sort of Manual Training work in absolutely every school throughout the country. But the task looks like such a momentous one that many are loath to undertake it. They assign reasons galore to justify their lethargy, the principal ones of which are about three in number: *First*, lack of time; *second*, lack of money; and *third*, lack of trained teachers.

The more conservative school men hold up and magnify these supposed difficulties until they intimidate many younger and more

energetic teachers, who would otherwise dare to push the movement according to their convictions.

In the consideration of any question, only those who have made many careful tests have any right to a firm opinion, and men of such experience agree that lack of time can not be listed as an influence against introducing Manual Training in every one of our elementary schools.

#### LACK OF TIME.

It is the consensus of opinion among such educators as President F. A. Cotton, of La Crosse, Wis.; Prof. O. H. Benson, Ed. Dept. of Int., Washington, D. C.; President, J. R. Steward, National Manual Training Corporation; Superintendent J. F. Haines, Noblesville, Ind., and hundreds of others who have given *grade* pupils time for Manual Training work, that they not only are not retarded in their other studies, but are invariably strengthened to a great degree.

**Results of  
Actual Tests.**

In six thousand cases carefully tested in the city of Chicago, it was definitely proven that a boy takes Manual Training and arithmetic quicker than he takes arithmetic alone. Over thirty thousand other experiments throughout the United States, from Massachusetts to California, and from Dakota to Texas, have given similar results. But the amusing thing to those who really know the Manual Training experience of the country is that those school men who have never made any investigation will attempt to dispute it.

Many a lad, too old to be called a child, too young to be considered a man, is floundering about in the pollywog stage—on the verge of quitting school because he has no aim in view, he doesn't know where he is going; he hasn't located his directions. Such boys are not the exception; they are abundant in every school—in fact, they are the majority—the ninety and nine.

**The Ninety  
and Nine.**

Manual Training has enabled hundreds and hundreds of just such fellows to find themselves. The few hours of time spent upon the hand work have often instilled new energy and ambition which paid as returns a life career of valuable service.

It is the dull boy's salvation; it keeps the otherwise uninterested lad in school.

Watt was a dull boy, but certainly the world owes much to his application and inventive genius. Every day is proving more and

more the truth of the statement that genius is not inspiration but perspiration.

In his final examination for graduation, Napoleon stood forty-second in his class. Will someone kindly name any of the forty-one who ranked above him in scholarship? Somewhere Napoleon learned the value of hard effort.

We are never losing time when we are teaching our boys and girls to *work*, just plain W-O-R-K, like our grandfathers used to spell it. Our schools are turning out too many young men who are looking for *positions*, rather than *work*—who think they should receive a *salary* rather than *wages*. There is no doubt that our schools are very much to blame for hard work going out of repute. Pupils have been taught to study their books, until they often forget the real work of the world. The books would get a more spontaneous and vital consideration if our schools would take the time to require pupils to work and work until they fairly craved the assistance of books.

#### LACK OF MONEY.

**Per Capita Cost  
of Schools and  
of Crime.**

The lack of finances can never be given as satisfactory reason for neglecting to install Manual Training in the grades. This excuse is usually a mere subterfuge for the lack of ambition and conviction. While the cry of poverty is going up and the so-called enormous expense of the public schools is being lamented, statistics show that the per capita cost of crime in the United States today is greater than the per capita cost of education. Not many people complain because of the annual outlay necessitated by criminals. When we consider the class of men who require this expense, we find that three-fourths of them are incompetents, while less than one-fourth are illiterates. Most of them have been trained beyond the point of illiteracy, but not to that practical efficiency of self-support.

A certain county once spent five thousand dollars to send a young man to the penitentiary, and the taxpayers seemed to feel that it was a good investment. That same amount of money could have placed, and maintained for a year, some creditable kind of Manual Training in every school throughout that country—but would those same taxpayers have considered that well spent?

Our state recognizes its duty in all its penal institutions and proceeds to train the hands of its inmates. In *reformation* it offers hand work, regardless of cost; would it not be economy to offer

some of it during *formation*, and thus dispense with the necessity of so much *reformation*?

Most of our reformatories have better advantages in every way than our public schools. If our honest, upright boys from the public schools should visit some of our boys' reformatories and see their beautiful shops, their gymnasiums, their gardens and agricultural plots, they would probably feel that the state places the premium upon the bad boy.

Reformatories  
Offer Better  
Advantages  
Than Our  
Public Schools.

It would not require great expense for every school in the United States to fit itself to do some very valuable work in Manual Training. It does not of necessity demand a separate room. It is a mistaken idea that this work calls for line shafts with their whirling pulleys and flying belts. Those things are not meant for hand training, but rather to employ power to take the place of hand effort; their design is commercial rather than educational; therefore they belong to the vocational schools.

The simple fundamental hand tools are the principal things needed in undertaking this work. There is more possibility of acquiring skill with an ordinary hammer than with a pile-driver; more room for art in the use of a hand saw or chisel than in the largest circle saw ever driven by steam, and more practical education in a carpenter's steel square than the average student gets out of his algebra and geometry combined.

A very small outlay would furnish a working nucleus. Tables or benches could be, and in some schools have been, installed in the regular school room. To be sure, it gives it the appearance of industry, but certainly nothing is more inspiring. A place for work is just as dignified as a place for study. A boy should be taught that he can be just as much a gentleman, standing up before his vise with his hands dirty and his sleeves rolled up, as he can sitting by his dictionary with a pencil behind his ear.

The Dignity  
of Labor.

Because certain parts of the room are periodically being used for work is no reason why they need be untidy or in any way objectionable. All the required tools and materials, when not in use, should be kept in systematic order. It is as much a part of one's education to learn how to care for things as it is to construct them. The very order and neatness of the shop, having a place for everything and then seeing that it is kept there, has a tendency to reflect organization and system upon the child's way of thinking. Satisfactory tool cases, shelves or receptacles can be constructed

by the class, even if they have to resort to scrap lumber or dry goods boxes for material.

In some of the smaller schools where Manual Training classes are doing excellent work today, the original expense was met by receipts from school entertainments. In others, the pupils or their parents paid a small monthly fee. In still others, the superintendent or enthusiastic teachers—and jewels they were too—paid for the initial cost. In all such cases the success of the work attracted the attention of parents and officials and so won their approval that the proper funds were readily provided.

Our progress is retarded not so much by a lack of finances as by the lack of disposition to make the outlay. School boards and taxpayers do not realize the educational value of hand work, and why should they? We must not expect laymen to thrust equipment and other advantages upon us as long as we teachers remain so vacillating or timid in our requisitions.

If those who have the management of naval affairs in hand feel the need of more battleships, they demand them, and we, the greatest Christian and peace-loving people on the globe, immediately furnish them. If shortage of funds threatens to delay the work on the Panama Canal, we unflinchingly go into our coffers and hand over the amount. No public progress ceases its strides and waits for money to be thrust upon it. Why should we school teachers, who are molding the lives of those who will soon control all these affairs, hesitate to demand the things we need? Suppose some of the taxpayers do flinch quite a little, and say some things which may disturb the foundation of our tenure of office? We must follow our convictions when we know that we are right. They do not mean it—they are waiting to be shown, and, like the pupil, they are best impressed by material results. We need have no scruples against calling for more equipment as long as the average parent is allowing his child to spend enough for luxury each week to pay more than his apportionment of the Manual Training department.

#### LACK OF TEACHERS.

Then comes the averred difficulty in finding teachers who are sufficiently trained to present this work; but this condition need not be considered appalling. Those who are so insistent upon the *preparation* of these teachers usually refer almost entirely to the mechanical side. They may be quite enthusiastic for the introduc-

tion of Manual Training, but their enthusiasm has certainly outrun their pedagogy. The need is not for mechanics to do our teaching, but for teachers who may have sufficient interest and appreciation for mechanical principles to study their various applications, and employ their present pedagogy in their presentation.

A mechanic is one thing, but a teacher is decidedly another. A fine mechanic may understand materials and processes of dealing with them, but if he has not made a very careful study of the development of the child mind, he is a dangerous misfit in the school business.

It is not the intention to underrate the special teacher, provided he is primarily a *teacher*; but it frequently happens that the so-called special Manual Training teacher is one whose entire training was acquired in some mill, factory or cabinet shop. It has never been his business to organize courses of study, to select and develop points of correlation, nor to seek out processes of greatest educational value. While school men of long years of experience are undecided as to matters pertaining to this vital subject, does it look altogether advisable to entrust its presentation to men who are pedagogically untrained? No school superintendent would consider placing a German class in charge of a native-born German, be he ever so polished in that tongue, unless he also knew the language of the class sufficiently well to translate his knowledge into terms of their comprehension. So the mechanic, though he may be authority in his line, is at sea to apply his understanding or skill to the educational development of young minds, unless he comprehends the processes of that development.

If there is any subject in the curriculum which demands careful handling and sound psychology, it is Manual Training. The land is full of teachers who can do very excellent work in Reading, Arithmetic, History or Grammar. These subjects have been well taught so long that correct methods have been worked out and pretty well established—except the fact that we are somewhat neglecting their concrete application.

The very newness of Manual Training and its struggle against conservatism and poverty require that it should be placed in the hands only of teachers of recognized ability. It is in nowise antagonistic to the classics and the so-called cultural subjects, but it is allied with their interests and correlated with their subject matter. Our having neglected Manual Training so long should not have

Pedagogy  
versus  
Mechanics.

The Best  
TEACHING SKILL  
Required for  
Manual  
Training

the detrimental reaction of causing us to attempt a reversal of our pedagogy. The truths, concepts and judgments are to be imparted, handled and developed by the same kind of minds to which our schools have long been imparting knowledge on other subjects.

The same processes of inductive and deductive reasoning must be employed. The laws of teaching are constant; we must always work from the *known* to the related *unknown*, and the skill of the teacher lies in her ability to seek out and present this relation. We can not invent any new kind of psychology for the subject of Manual Training; neither can we hope to *educate* by the introduction of that work if we intrust it to artisans who, on account of their skill with material things, and lack of understanding of mental needs, will cater to the former at the expense of the latter.

Our lack of Manual Training teachers is also due to the fact that many of us are expecting entirely too much of them. Superintendents are expecting these teachers to originate and organize their own courses; to determine absolutely what things are to be made, and their order of sequence; to be able to give all the instruction the class may need, and serve as an encyclopedia of general information. Certainly there are some teachers who can do all these things, but they are very few and far between. The average special Manual Training teacher is some young fellow who has little or no experience in the school room; who has never conceived the problem of organizing any subject matter into a logical course; whose only training in his chosen line consists of a few months in preparatory school. It is not the purpose of this argument to discourage or any way underestimate the ambition of such very worthy teachers, but rather to defend them against the accusations of those who do not know what to expect. These same superintendents who are expecting such unprepared Manual Training teachers to make good, under such inauspicious conditions, would not advise the oldest Mathematics or History teacher in the corps to attempt her subject without a good text to serve at least as an outline.

If there is created a new department, under a different teacher, for this hand work, it tends too much to set it off from the other subjects, as if to differentiate between the mind and the hand, when the very issue is to bring them into closer co-ordination.

In the elementary schools, the regular teacher who has charge of the other work is certainly the one best prepared to conduct

their hand training. It is she who knows all their characteristics and how to appeal best to their various natures. Being thoroughly acquainted with all their difficulties and weaknesses, she can have a broader sympathy for the pupil who is dull in one line because she has an opportunity to know of some subject where he may be doing very much better. She can correlate the concrete with the abstract by seeing that everything which the boy does with his hands is clearly related with the subjects which he is studying in the class room.

Unity Rather  
Than Division.

#### CORRELATION WITH THE REGULAR STUDIES.

The closer the correlation existing between the hand work and the other subjects, the greater the intrinsic value of the hand work, besides the interest inspired in both. In order that this work may be properly related to the Reading work, the child should be required to gather his instructions from the printed page. Each operation in the progression of his problem should be clearly and definitely stated in concise English. This will inspire him to read carefully and with real interest, for he soon finds that he is reading for a purpose. Thus his shop work becomes a real school proposition; he reads this lesson just as he reads his Geography or History, but now his interpretation is in material form and stands ready to bear evidence of his faulty understanding or careless execution.

Shop Work  
Should Benefit  
Reading.

This plan has been thoroughly tested in the cases of over thirty thousand children in various parts of the United States, and the unanimous report of superintendents and teachers has been that the improvement brought about in the pupil's reading alone was sufficient to justify the trouble and expense. It instills habits of concentrating attention upon the printed page, and thus touches every phase of school work fundamentally dependent upon reading.

The teacher who has her pupils work from oral instructions, or from imitation of a model made by the instructor, is using a method at variance with every other subject of the curriculum, and is surely emphasizing the gap between the shop and the class room, rather than bridging it over by unifying them.

Again, it is not enough that a boy be able to shape a piece of wood skilfully, but he should be educated with reference to wood. He should be informed in regard to its structure, its properties and uses; the various kinds of trees; the localities in which they are found, and the conditions under which they thrive; food of

**Correlation  
with Regular  
Studies.**

trees, circulation, coloring matter, fruits and various products which come from tree plants; forestry, lumbering, innumerable processes of milling, and thousands of other kindred subjects, should open vast fields of research pertaining to Geography, Botany, Physics, Agriculture, and the great commercial enterprises.

Every tool should not only be learned by name and nature, but its very ancestry should be studied. Young students are interested in comparing our present-day edge tools with those fashioned and used by the Indians or other savages. The vast domain of metals lies open and invites the minds of the pupils back to the mountains, where they review their Geography lessons, from the ore to the magnificently polished tools of their own shop. Combinations of metals and natures of alloys should be worked out until the child understands that man has become master of metals, tempering them at will to serve his various needs.

Tables of weights and measures should be made to have direct application. Uses of levers should become realities rather than mere formulae employing P., F. and W. Functions of pulleys should be so mastered that the little lad goes home and arranges the hay rope so that the old mare alone can hoist the load previously requiring the team.

Paints, stains, oils, shellacs, varnishes, etc., should be added to the working knowledge of the child, in such a way that they appeal to his reasoning and develop his judgment.

**Should be a  
Real Course  
in Sewing.**

Sewing a seam may have great value as hand training, but the educational value of the process can be very much enhanced if the girl is made to have a clear and extensive comprehension of the materials which she is handling. Her thread and muslin should be traced through all their steps of production back to the cotton plant. All the allied interests of History and Geography—even social development—should be touched upon to enlarge the child's conception. She should know that woolen goods owe their existence to the sheep; that silks and satins trace their origin back to the ugly, creeping silkworm; and hundreds of specific points could be stated to show the great educational value of a real *course* in sewing.

It is not that children should be given materials as the doctor gives medicine, to be swallowed and assimilated without any consideration as to their nature or identity; but every material or piece of equipment with which the child comes in contact should

have an educational function, and that function should be traced as far as the age and comprehension of the child will permit.

### INITIATIVE.

There is inherent in every normal child a disposition for construction. A boy makes a snow ball or a snow man for the satisfaction of the activity. A tiny girl will work by the hour preparing some nice mud pies; of course she has no intention of eating them, but is merely giving vent to her natural constructive activity. This latent tendency in the child is awaiting some guiding influence which will foster its development. This is the golden opportunity of the school—to *direct* the child's *initiative*, and while to direct does not in any sense mean to restrain, it must be clearly understood that a child's initiative—his spontaneous *do-ability*—must be wisely guided if it is to become efficiently kinetic.

**Initiative Not Power to Originate but the Germ of Do-ability.**

Some Manual Training teachers, over-zealous on this point, which they call initiative, have advanced the notion that every Manual Training problem should be drawn out of the child's own mind; that it is not the province of the teacher to furnish the course of instruction, but rather to place the material into the hands of the child, and then require him to make something for which his material is adapted, leaving that choice entirely to the pupil's option.

This line of reasoning not only denies our pedagogy in every way, but is also at open variance with all propositions in human existence. In every division of human activity, conditions, problems and perplexities exist, and it becomes the function of the mind and hand to solve these difficulties, as well as possible, with available materials. The workaday world does not furnish us with fine materials, equipments and sundries and require us to think out some product into which we can fashion them. Men do not make houses, tables, chairs, telephones or clothing simply because they happen to be furnished with materials particularly adapted to these objects, but they make them because there is somewhere an imperative need for such commodities.

**Demand Governs Production.**

We must keep in mind the fact that children, just like adults, are imitators. Their germ of initiative is not sufficient to enable them to originate until they have served a long apprenticeship in copying. The fundamental principles of construction must be given to the pupil in the printed instructions. Aside from these fundamentals will be ample room for the exercise of his initiative. Design

and decoration offer wide range of possibility and flexibility for the pupil to put his own personality into his work.

**Manual Training both a Science and an Art.**

The laws of science are fixed; they are arbitrary and require being mastered in their own way; but art is more flexible, making itself subservient to one's aesthetic taste. The underlying principles of our mother tongue are more or less established; they constitute our scientific *grammar*, but the artistic side allows of more freedom and display of personality; hence the study of *language*. In order to improve their own style, writers study over and over the masterpieces of our great authors, and thus acquire beauty of expression by mere absorption. No one would deny a child the privilege of reading choice literature for fear its influence would rob him of his individuality. Why, then, should we feel so reluctant in directing his hand work, for fear of destroying his initiative?

Grade children should not be required to spend time in construction of mere exercises. While this method may gain satisfactory results with mature students, who can readily comprehend the relation of these unassociated exercises to their future function in a completed piece of work, such application is too remote for younger minds. Each problem, when completed, should be something in itself, and the more closely it touches the boy's life, the more enthusiastically will he pursue its making. A boy will work on a sled or a kite with more spontaneity than he will a book case or a library table, because in his experience there is a need for the former. And such problems—toys though they be—can be made very valuable lessons in the boy's development if they are properly handled. All the shop problems should be carefully selected and graded so as to form a genuine course of study, with every problem in its proper and logical place according to the natural sequence of the course. Each lesson should be a review of the principles of the previous lessons, with just as much of the new as is consistent with the progress of the child.

**Sequence Important.**

Things pertaining to Agriculture should be woven into the course; planting boxes and seed testers should be made and placed in actual operation in the school. Miniature problems in the use of cement could easily be given, and all the properties and principles of that great factor in modern construction could be readily added to the child's general information.

The matters of mutual interest between the school and the farm are beyond limit, yet it is astonishing to see how many boys who

expect to be farmers feel that the school has nothing of value for them.

The consideration of an ideal course of study, in which the mind and hand work are properly balanced and fittingly correlated, resolves itself into a never-ending discussion. So numerous are the points of contact by which the school should communicate with its environment that almost any one of them would furnish thought for a lengthy treatise.

This paper has made no attempt at laying out a course of study; it has merely meant to offer some passing suggestions on a few salient points which certainly deserve the consideration of our public schools.

It is truly painful to see that time is going by day after day, while only a school, now and then, scattered here and there over the country, is really coming into its natural birthright and exercising its full possibility toward the *whole* child.

Lack of ambition is the cause of this delay. Thousands of teachers and officials recognize the value of Manual Training; yet they walk in the same old path, and allow things to pursue lines of least resistance.

**More Ambition  
Needed.**

Petty difficulties always have and always will exaggerate themselves in the eyes of those who can be put off by an excuse. Things were not favorable for the discovery of America, but ambition and fearless nerve accomplished the task. Freedom and prosperity did not thrust their blessings upon the American colonies, but every schoolboy knows that they were purchased regardless of the sacrifice.

No doubt our teachers are an overworked, underpaid and probably unappreciated class of public servants; but that does not relieve them, in the least degree, of their responsibility to the youth of the land. These children are in no wise to blame for the present social conditions, but if the schools of today give this generation of pupils their full deserts, the teachers of tomorrow will not want for means to pursue their calling.

Come, let us redouble our energy in an effort to hold the many who are going astray, and let us spare no means of making the fold more inviting; for whatever may be the cost, surely we may justly feel that there is room for rejoicing when we have reclaimed for our schools the Ninety and Nine.

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